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sidered first in these observations. The relation between it and written English is so intimate that it may be said that a good conversationalist will be a good writer—except possibly as to the mechanical product—while the converse is hardly possible. A man who uses slovenly English with his intimates will almost necessarily do so with others as well, so that the habit of correct speech needs to be practiced socially as well as professionally, and every one concedes its value professionally.

A man who cannot impress his subordinates with confidence in his ability will not be successful, hence the man of ready, concise and correct speech has infinitely the advantage over one who is not so equipped. This fact is shown by the many men who succeed simply by "making a bluff." It must not be inferred from this that the practice of bluffing is in any sense advocated; what is desirable is the readiness of speech which it requires.

A man who cannot convince his brother engineers of the truth of his ideas will stand small chance of succeeding with them, unless his ideas are so evidently worthy as to win without controversy. Even then, however, there is the force of conservatism which usually must be overcome, and that can be done most easily by a fluent use of the English language. The writer has often seen engineers who are really brilliant in invention and mechanical ingenuity, completely thrown off the track by a good talker. How few engineers, too, can acquit themselves well before an audience of other engineers. It is to be noted that those who make the best appearance under such circumstances are almost invariably the successful ones, for some reason or other.

But altogether the hardest position in which an engineer can be placed is before a board of directors who are inquiring into the causes of an underestimate, or making some similar query. Then, if ever, the engineer needs a fund of ready, convincing English. He must be accurate and concise. Shrewd, keen business men, who are accustomed to judging character by speech and action and appearance, and who furnish the funds for the engineer to spend, are the hardest to deal with, but make the best of friends if properly handled. When a man is in the wrong is no time to "bluff," but when he is right and the business man does not agree with him, then is the time when the best English is of most value.

Turning now to written speech, it is evident that many of the conditions referred to above must often be met by written communications.

A man's merely social correspondence does not often come in evidence; but it may do so, and therefore it should always be carefully prepared. How few men—engineers and others as well—can write a good business letter. There is a feeling among most people that a letter of application for a position does little good, as it is usually "placed on file for future reference." The writer thinks it is very often the fault of the letter itself. Personally he believes thoroughly in letters of application, and almost invariably exacts one from each applicant. If the spelling is correct and the wording good, it is a fair indication that the man will be painstaking in his *work* as well as in his letter writing. There is every opportunity to show originality in letters, and the man who can catch the attention of a busy executive engineer or business man by a letter of application is apt to have that letter answered immediately; at any rate his communication will be left in a conspicuous place for ready reference.

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The preparation of a specification is a work of art. The lawyer draws his contract, based upon it; the contractor prepares his bid by it; and the work is carried on and completed under its interpretation. The writer has been called upon to interpret specifications which were entirely incomprehensible because of want of punctuation and improper sentence construction. One branch of the United States government was very harshly criticised not long since, both editorially and by correspondents in engineering periodicals, because of faults in the specifications prepared by it. The fault was not overconciseness

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IV

[*From a construction engineer in a large western city.*]

The training an engineer needs most is in logic. The beauties of a figure of speech or of fanciful description may be appreciated but never imitated by an engineer. His work consists in stating clearly, in the form of a contract or specification, what he wishes done, or in describing a piece of construction or design for the benefit of his fellows, or in advocating the merits of a particular design before a board or commissioner. In all of these cases clear, precise statement of fact, together with a logical exposition of the reasoning process leading up to his conclusions, are leading requisites for successful work. If he happens to be advocating a particular design he will frequently have to explain technical points in a convincing manner to men totally unfamiliar with engineering science. He must then, for the time being, lay aside his technical vocabulary and in the fewest and clearest words possible, lest he become tedious, explain his principle from the ground up. He will occasionally be confronted by another engineer with a rival design, and must then engage in a joint debate. Here he will need all his powers, and a training in clear and logical thinking and in the expression of the basic engineering principles in plain, untechnical, Anglo-Saxon words, will prove invaluable to him. He must learn to avoid generalities and bring out the definite, concrete facts at the root of the matter, and avoid the loose and dangerous methods of reasoning by analogy.

When a man first leaves college he does not use his English training. He can rise as a draftsman, inspector, or instrument man to a salary of $5.00 per day without needing it. But as he goes above this limit and takes up consulting work, administrative work, or the commercial side of engineering, his English training will become increasingly useful. His engineering ability depends largely on his mathematical training and his experience, but his engineering reputation depends to a greater degree on his ability to handle English properly in technical papers, or to convince laymen of the soundness of his views.

V

[*From an electrical mining engineer.*]

As I remember, one of the greatest bores of my college course was a course in English, a two hour course, which at that time was the only one that was required. I could not understand at the time why there should be this requirement in English for graduation from the Engineering Department, and consequently skimmed over it with as little work and thought as possible. I can remember, however, when a year or two after my graduation I heard that the course had been increased to four hours, I thought to myself that it was a good thing and that the requirement should really be more. These courses should be adapted to strictly engineering work and should not consist of writing a series of compositions on "Spring," "Flowers," and "The Blue Sky Overhead". These courses should require the writing of specifications covering a wide field of engineering work, and the making of reports on the condition of buildings, power plants, and all kinds of machinery, such as a capitalist who is a prospective buyer might ask an engineer to draw up. It would be well to include practice in making out forms which could be used for daily, weekly and monthly reports in connection with power plants, building operations, and construction work of all kinds. A little practice in writing business letters would help. I don't want you to understand by this that my idea of these courses is to confine them entirely to writing. A lot of practice in the use of words to express thought is really the most important thing. To be able to express one's thoughts, using no superfluous words and to be able to transfer what is in your mind to the mind of your auditor, in a clear, precise manner, is surely an accomplishment to strive for.

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CONTRIBUTIONS TO RHETORICAL THEORY
EDITED BY FRED NEWTON SCOTT, PH.D.
Professor of Rhetoric in the University of Michigan

VII

THE VALUE OF ENGLISH TO THE PRACTICING ENGINEER

ANN ARBOR, MICH.
LIBRARY PRINTING PLANT
1906

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VII

THE VALUE OF ENGLISH TO THE PRACTICING ENGINEER

Breitenbach Harold Prell

UNIV. OF CALIFORNIA

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CALIFORNIA

PREFACE

The letters contained in this number of *Contributions* were recently published by the University of Michigan for distribution among the students of the Department of Engineering. Having served their original purpose of stimulating interest in the study of English Composition, they are now reprinted as a document in rhetorical theory. Regarded from this point of view their interest and value lies in the fact that they are the frank opinions of men who are accustomed to regard their mother-tongue not as a means of amusement or self-gratification, but as an instrument for directing the behavior of their fellow-men. They thus furnish data, so far as they go, for solving the most fundamental of rhetorical problems.

The original purpose for which the letters were obtained, and the mode of obtaining them, are explained by Mr. Breitenbach in his introductory note.—THE EDITOR.

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THE VALUE OF ENGLISH TO THE PRACTICING ENGINEER

[In this pamphlet will be found the opinions of a number of practicing engineers upon the value of a training in English. Originally written as letters to students of the Engineering Department of the University of Michigan, these opinions are here reproduced for the benefit of other students and of all who are interested in problems of education.

The letters were the outcome of a discussion which arose some months ago in a class of junior engineers. The question under consideration was the comparative value of pure and applied science in the engineering curriculum. As was natural perhaps, every member of the class upheld the superior value of applied science, on the ground that it was more "practical." This led to an inquiry into the character of a liberal education and the relation of science and culture, and in this connection the following questions arose: 1. Is the study of English part of the cultural or of the practical training of the engineer? 2. Should essay-subjects for engineering students be drawn from the students' general interests, or be confined to the scientific and technical field? Incidentally it appeared that some members of the class were in doubt whether training in English was of special value to engineers.

In order to answer these questions and allay the doubt which had arisen, it seemed wise to refer the points at issue to practicing engineers whose experience would qualify them to speak with authority.

Accordingly a list was made of about eighty successful engineers who since leaving the University had each had from five to ten years of professional activity. The students were then required to address letters to these graduates asking them:

1. To express their opinions on the value of training in English to the practicing engineer.
2. To cite any cases in which such training had been of special value to them.
3. To offer suggestions, drawn from their experience, for the course in English in the Engineering Department.

To these letters about one half of the number addressed were kind enough to reply —a much larger proportion than was anticipated, since engineers do not, as a rule, have time for what may be called literary correspondence. From these replies the following material has been selected.

Taking the letters as a whole and examining them with reference to the first of the questions above, the most striking feature of them is their unanimity. All the writers agree that training in English is one of the engineer's most valuable assets. Many advise an increase in the required work in this subject, and several go so far as to recommend a year in the Literary Department.

The replies to the second question mention as the chief application of the engineer's training in English, the writing of reports, specifications, contracts, etc. Several cases are cited of engineers who have made writing their life-work, that is, who have gone into catalogue-writing, technical journalism, and the like.

In the case of the third question the replies are less uniform, but all lay stress upon

the need of long-continued practice under guidance and criticism. The kind of essay-subjects does not appear to be of much importance provided the topics are such as interest the student.

It is to be regretted that of so many interesting and valuable letters only a few could be published. Those that are reproduced, however, are representative and fairly indicate the consensus of opinion. It remains to acknowledge the courtesy of those who have contributed to the success of the plan by devoting to the subject the time and thought of busy men. They may be sure that the spirit of earnest unselfishness in which the letters were written will find a quick response in the hearts of the younger generation.

H. P. BREITENBACH,
Instructor in Rhetoric.]

I

[*From the assistant to the chief engineer of an important construction company.*]

I have your favor of December 18th, and am delighted to have the opportunity of discussing with you the need of a thorough training in English for a member of the engineering profession.

In the first place, one must keep in mind that an engineer should be, above all other things, a man—well-balanced, broad-minded and capable of taking a place in the community that will reflect credit on his profession. He should be fitted to discharge the duties imposed upon all men who have special endowments or exceptional opportunity. The broadest and most thorough general culture that one can have is not too good for a man who is to be an active member of society or a representative citizen in the state.

I do not know that this consideration is especially applicable to your question any more than a similar query with reference to any other branch of what may be properly termed "culture study"; I do know that English is at least as important as the study of any of the other humanities.

When one comes to consider the proposition from a slightly more selfish and more narrow point of view, the work in English becomes of paramount importance, since the intelligent expression of ideas will often do more to put one in touch with his working associates than having the ideas themselves. I do not mean by this that "running the bluff" is conducive to prominent or enviable success, but that a good appearance and the ability to show people that one has ideas in his mind will go far towards gaining respect and confidence.

I cannot say a great deal about the specific uses of the proper English training by an engineer, except to call to your attention the fact that most of the "big" work of the engineer is done with the typewriter rather than with the slide-rule or T-square; in other words, you will probably find after graduation that highly technical work, while absolutely essential, is not the work which alone will command the highest places professionally. From this it results that accuracy and clearness in expression, the ability to differentiate between expressions which will irritate and those which will stimulate—in short, the ability to convey to another man in cold type the exact impression which you wish him to receive, is a prime requisite. Loosely-worded specifications and inaccurate contracts are perhaps the most fruitful source of contention, difficulty, and expense in work where contracts are involved; and you will most certainly find that your official chiefs will expect any reports which you make for them to be such that they may get at the meat of the subject reported without having to make a large allowance for your personal equation in the matter of diction.

I cannot give any concrete instances of what you wish, for the reason that experience has indicated that loose, inelegant, and indefinite English is, among engineers, decidedly the rule—this, doubtless, in consequence of the fact that we are required less frequently than clerics, doctors, and barristers to present an academic education as a preliminary to our more narrowly technical work.

The demands of office routine prevent me from replying as fully as I should like to your request for suggestions as to the preparation in English to be given to engineers. I will say briefly, however, that at least one hour a day each term throughout the whole course would be not at all unprofitable, most of that time to be spent in the study of literary English, as distinguished from the class of work which was given in our department in my undergraduate days, and which I believe is given largely at the present time.

Very few professional men have anything like a correct literary taste, a thing which is of more vital significance than you perhaps feel now. My personal experience was that after leaving the atmosphere of refinement and culture of Ann Arbor and getting into the decidedly material ten or twelve hours a day of factory life, I needed something to fall back upon for mental and moral stimulus. Social recreation is seldom offered to a young fellow just out of college in quite the same way that you find it in our little Washtenaw town; and good reading, music, and meritorious plays will go a long way toward filling up the void. While this last suggestion is generally applicable to professional men, I think it applies especially to the case of engineers, since our work is usually stripped of all the more subtle influences of intimate personal association which are so essential, especially to younger men.

II

[*From an architect, contractor, and inventor in a large western city.*]

I wish to thank you for writing to me requesting my opinion regarding the degree of proficiency in the use of English needed by an engineer.

I can hardly express myself in sufficiently strong terms regarding such need. Engineering of today does not mean alone drafting, shop work, inspection and other duties which place the engineer as a subordinate under other officers. The engineer of ambition should strive to be in charge of work, and especially in charge of its commercial end. In my mind, the really successful engineer is the one who stands at the head of an industrial organization, who *manages* and leaves the subordinate duties to others. In such a managing position a thorough knowledge of English is an absolute requisite. The engineer in this position is called upon to formulate propositions and contracts. His correspondence becomes one of the very large essentials of his duties. A perfect command of the English language places him in a decidedly superior position.

The engineer in the position of industrial manager should control the advertisements, the sales department, and the manufacturing department. In other words, with the superior training he has received he should be in a position to handle every branch of a manufacturing concern; and to make himself fully efficient in that position, a thorough knowledge of English is one of the fundamental requisites. In my opinion, therefore, too much stress cannot be laid upon proper training in this respect.

Personally, I feel that I never have given this portion of my college education sufficient attention. While at the University I never realized that those studies which are apparently not at all engineering are in reality fully as important as are calculus, mechanics, drafting, etc. An engineering student *should not try to become a practical man at the University*. He has forty years after the University life in which to become a practical man, but he has only four years in which to become a thoroughly theoretical and polished man.

Give me therefore at all times the graduate student with a sound body, a good, clear mind, and a thorough general knowledge, together with proper proficiency and the fundamental theory underlying all engineering principles. With such a student in hand, the matter of making him a practical man is only one of a little persistence and patience; in the end he will be by far the most successful engineer.

III

[*From a consulting civil engineer.*]

The following observations are suggested as possible lines along which to work out some courses which might appeal particularly to engineering students. They have been largely suggested by my personal experience since graduation. It must be confessed that they are open to the criticism of being almost wholly utilitarian, and of possessing but little of the culture value which English work is supposed to have. No man, be he engineer or other, can afford to cut himself off entirely from all the culture studies either before or after graduation; but in a technical course looking mainly to professional training, some excuse can be found for purely utilitarian studies, even in English.

Instructors in English insist strongly on a study of the English classics as models of form and style and as sources from which a broad, general culture can be drawn. They are right, and no man can afford to be without a good knowledge of the classics of the language. What follows is intended to supplement such work with special reference to technical lines.

Language is both oral and written. While conversational English may not have been included in your inquiry, still it is of so much importance that it will be con-

sidered first in these observations. The relation between it and written English is so intimate that it may be said that a good conversationalist will be a good writer—except possibly as to the mechanical product—while the converse is hardly possible. A man who uses slovenly English with his intimates will almost necessarily do so with others as well, so that the habit of correct speech needs to be practiced socially as well as professionally, and every one concedes its value professionally.

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IV

[*From a construction engineer in a large western city.*]

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V

[*From an electrical mining engineer.*]

As I remember, one of the greatest bores of my college course was a course in English, a two hour course, which at that time was the only one that was required. I could not understand at the time why there should be this requirement in English for graduation from the Engineering Department, and consequently skimmed over it with as little work and thought as possible. I can remember, however, when a year or two after my graduation I heard that the course had been increased to four hours, I thought to myself that it was a good thing and that the requirement should really be more. These courses should be adapted to strictly engineering work and should not consist of writing a series of compositions on "Spring," "Flowers," and "The Blue Sky Overhead". These courses should require the writing of specifications covering a wide field of engineering work, and the making of reports on the condition of buildings, power plants, and all kinds of machinery, such as a capitalist who is a prospective buyer might ask an engineer to draw up. It would be well to include practice in making out forms which could be used for daily, weekly and monthly reports in connection with power plants, building operations, and construction work of all kinds. A little practice in writing business letters would help. I don't want you to understand by this that my idea of these courses is to confine them entirely to writing. A lot of practice in the use of words to express thought is really the most important thing. To be able to express one's thoughts, using no superfluous words and to be able to transfer what is in your mind to the mind of your auditor, in a clear, precise manner, is surely an accomplishment to strive for.

VI

[*From a U. S. assistant engineer.*]

1. English has been of more value to me in the practice of engineering than any other study.

2. Concrete examples wherein I have been helped by my knowledge of English cannot well be given; English has always been present. But I am sure it has been useful to me in securing work and in making specifications, reports, etc.

3. An engineer cannot have too much preparation in English; the better his knowledge of English the better able will he be to solve the problems that are likely to confront him. He cannot hope to get this preparation in college, but he should make a good start there.

Engineering is an exact science and therefore an engineer should be able to express his ideas, orally or in writing, as clearly and concisely as he would render a problem in mathematics. Too much attention cannot be given to composition and expression, especially to expression. The student who is inclined to reading can acquire these in large measure while in college, and will continue to do so after leaving college.

VII

[*From a consulting engineer in a large western city.*]

A good knowledge of English and ability to use it is of great value to the practicing engineer. This is particularly true of the engineer in the higher walks of the profession, as he must be able to describe the work he proposes to construct clearly, comprehensively and succinctly. It is also true of the engineer who is engaged in constructing the work so described, as he must understand thoroughly the description by which he carries on his work. It is also true of the man making preliminary investigations or surveys for proposed work, as he must furnish the employers with complete, clear, and exact information as to existing conditions.

1. As to its personal value to me in my practice, I will say that it has enabled me to report clearly and convincingly on my plans or methods for proposed work so that my employers have agreed to these plans or methods; it has enabled me to describe clearly in a specification the material and workmanship involved in my work; and it has enabled me to tell plainly and without unnecessary words anything regarding the work.

2. One example of the value of exact knowledge of language is to be found in the specification of work. Engineers who can write a clear and full specification for work without redundancy are the exception rather than the rule. The plans of a work show all lines, parts and commonly all dimensions. The specifications describe materials and workmanship, and often the terms of acceptance and payment. It is evident that in the specification words must be used in their exact meaning and with true value; ambiguous words and phrases will cause disputes and often lawsuits, redundancy creates confusion, and involved phrases or badly arranged paragraphs lead to errors or omissions.

Again, an engineer who appears in court as a witness should have a full knowledge and quick comprehension of the meaning of words that he may give clear evidence and that he may comprehend questions. Without such knowledge his evidence is likely to be involved and contradictory.

3. The answer to this question, I think, may be deduced from the foregoing. The engineer should be logical, deducing clearly and reasoning both broadly and closely; rhetorical, in that he should be able to compose, if not with elegance, at least plainly and with good construction; and his vocabulary should be simple, containing words of clear and positive meaning. These conditions can be obtained only by broad reading of the best authors. Essays and fiction are both to be included, for much clearness of diction, good construction and strong reasoning may be found therein. History, biography and travel are all advantageous, giving breadth of view. Technical works contain the basis of his knowledge, but while necessary to education, are not always beneficial to language.

VIII

[*From the editor of a technical journal.*]

1. "What is the value of a working knowledge of English to an engineer or other worker in science?" You might just as well ask me, What is the value of a sound general education? It is simply invaluable. Why? Because the educated man is adaptable to the thousand and one emergencies and changes of circumstance which no human being can

foresee, because his mind is flexible, because he can grapple with new conditions, because his mind remains young longer and retains far beyond the average the power to assimilate new ideas and grow. A working knowledge of English, that is, the ability to write it clearly and forcibly in correct style fit to print, is almost as necessary to an engineer as is a good handwriting to a bookkeeper. It is one of the tools of his trade. He must often prepare reports; he must write letters; as he rises in his profession he will contribute to the engineering press, and at every step he will be hampered if he can't write. The ability to write may not be wholly indispensable in the early drudgery of the young graduate fresh from college, but that is true of all general education: the need of it becomes more imperious and painful the higher you rise in your professional work. Routine drudgery is the common lot of the beginner in business, in the law, in medicine, everywhere, but as the work grows more responsible and difficult, such a resource as a working knowledge of English comes more and more into play.

2. "What preparation in English will best fit him to solve the problems likely to confront him?" I have often been struck by the excellent command of English that the average educated Briton displays in his letters and in his contributions to the trade press. In this respect there is simply no comparison between the Englishman and the American. To the educated Frenchman the statement would apply even more forcibly, because almost every Frenchman is a born prose writer. Now, why do the English excel us? Why do we so rarely find among our university graduates in the United States so much as a gleam of literary gift? Because we do not spend enough time in the study of the best prose writers, because we do not live with them and in them, because we do not write enough. The last reason is most important. To learn to write, about the only way is to write and write and write. And when the teacher corrects, let him beware of a too rigid and pedantic adherence to the rules of composition lest he stifle what individuality the pupil possesses. Let him nurse and cherish the little originality that he may perceive in and between the lines of the composition, and not choke it under a mass of rhetorical rules. Teach the young writer to dare to be himself, to say what he thinks in his own way without timid fear of violating some rule or incurring the censure of some old fossil who has forgotten that he ever was young. Self-confidence is no small part of the writer's outfit. Then, if the student has anything to say, he will soon learn how to say it. The more ideas you find in his head the easier will be your task, for it is hard to teach style to anyone who lacks an active and thinking brain. After all, the supreme thing in writing is something worth saying; it is matter, not manner; it is the message and not the form. A vigorous thinker is not likely to grope about long for the most effective means of presenting his thoughts; he is not apt to worry about his style; he doesn't have to.

I close with the statement that in my own bread-and-butter work, which consists principally of business correspondence, my high-school drill in the writing of English is of more practical use to me than all the other things I was ever taught. It seems to me that you have a rare chance to work out courses of the greatest practical utility to your students, to say nothing of the happiness you will give them if you once kindle their love of good literature.

IX

[*From a member of a firm of advertising engineers.*]

Replying to your favor, asking me to name concrete instances where I have found my knowledge of English of value in professional work, I can name no such cases as I have never been engaged in professional work, if you mean by that actual engineering work.

On the other hand, I have made my living since leaving school entirely by the use of English, as, except for a brief period in the Westinghouse shops, I have been solely engaged in engineering journalism and advertising.

Answering your second question, concerning the kind of preparation in this subject that I would consider best for an engineering student, I would advise a great deal more practice in writing than most students receive, with a thorough editing or correcting of the manuscript by instructors.

Further than this, I would suggest that writing upon live subjects would be much more valuable to the student than upon uninteresting or meaningless topics. For instance you might write a series of letters with the object of selling a machine by correspondence or with the object of inducing a public board to take some particular course of action in regard to an engineering project.

It might not be a bad exercise also for engineering students to visit an engineering work and then write an article upon it, designed for one of the engineering periodicals, or

to write a paper for an engineering society upon some original work going on in the shops or class-rooms.

In any case, in engineering work what you say is of a great deal more importance than how you say it, and if you write a great deal on a subject about which you are thoroughly in earnest, you will be able, after a while, to state your thoughts effectively.

A knowledge of spelling, punctuation and the grammar of the English language is also very important, as I find that most engineering graduates are surprisingly deficient in these respects, so much so that their articles and letters will not bear printing without a considerable amount of editing.

X

[*From an instructor in civil engineering formerly connected with the U. S. Coast Survey.*]

At various times in his career, an engineer will require a knowledge of English in order to prepare reports upon work performed under his direction, instructions to his subordinates for the execution of his plans, and contracts and specifications which shall state the requirements governing some proposed work. In every case his statement should be complete, concise, and exact, and should be arranged in some logical order.

As an example in my own experience, I can state that one of my first duties in actual engineering practice was to compile data from office records and prepare the annual report of my superior officer for his approval and transmission to the proper department authorities at Washington.

In preparation at the University, the engineering student should study the paragraph as a unit, and should criticise the composition of articles in the current technical periodicals and books from this standpoint. He should also familiarize himself with methods of analyzing various subjects into topics and sub-topics to such an extent that each of the ultimate subdivisions will form the subject of a unit paragraph. In general, it is a study of English composition.

XI

[*From the president of an electrical company.*]

1. An engineer should be able to express at all times, in clear and concise language, the meaning that he wishes to convey. It is needless to say that he should be able to use correct grammar, and in addition to the usual vocabulary required in ordinary conversation, he should be as fully posted as possible on strict engineering terms. It is frequently embarassing for a young man who has just completed an engineering course of study to run up against the practical engineer and be unable to recognize the names of some of the common elements of machinery or mechanical appliances.

2. It is not only difficult but undesirable to give concrete examples referring to particular persons, but it is not at all unusual to run across men in the engineering profession, who are college graduates, who are unable to use ordinarily good English, and are utterly incapable of writing a good business letter.

3. As stated under (1), I believe that all college graduates whether in the engineering department or not, should have a most thorough knowledge of the English language. In addition to these regular courses, I believe that the student in the engineering department could, with advantage, have a course of technical language.

XII

[*From an estimating engineer connected with an eastern company.*]

To one engaged in the active practice of engineering, probably the first use for any preparation he may have had in English comes in the form of correspondence. Correspondence is in itself a fine art, especially business correspondence, and is of extreme importance. Oftentimes the impression created by a letter or proposal determines the course of action of a prospective client. In many of the large contracting and manufacturing concerns today men are employed to do nothing but attend to "kicks", and their business is to keep clients satisfied and soothe the wounded feelings of customers who think they have been unjustly treated. To be a good correspondent one must first have a thorough knowledge of the language he uses. Every engineer who attains any degree of success has a large volume of correspondence, and by laymen who do not meet or know him his ability is often judged by his letters. I recall a number of instances where the preparation which I received in English was of great value to me, and some also, I must confess, where my lack of knowledge handicapped me severely. Probably the next use in point of

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time would arise from affiliating with some society. Papers on subjects of interest to men in certain lines of work, and discussions of the same, are prepared and presented, and here the use of English is so obvious as to require only mention. In reports on work, such as tests, examinations of structures, machines, excavations, etc., often the amount of work done and the efficiency with which it has been accomplished can only be indicated in the final report. and this being the only means which the engineer in charge has to show his employers or clients what he has done, is of course of great importance to him. Its value will depend largely on the skill with which it has been put together. The mass of information which he may have obtained is of little use until properly arranged and explained.

In answer to your second question I would say that I favor a course decidedly practical. It should consist of a thorough review of grammar, a subject which most students take up at a time when they are unable to appreciate its value, a drill in the use of synonyms, and practice in the construction of sentences and paragraphs. It should aim to teach the student to express himself clearly, concisely and briefly. Elaborate, ornate language, embellished with flowery figures of speech, has fallen into disuse of late. Once called eloquence, it is now commonly known as "hot air." In the profession of engineering it is excess baggage, and in the keen competition of the age, the young engineer should travel light.

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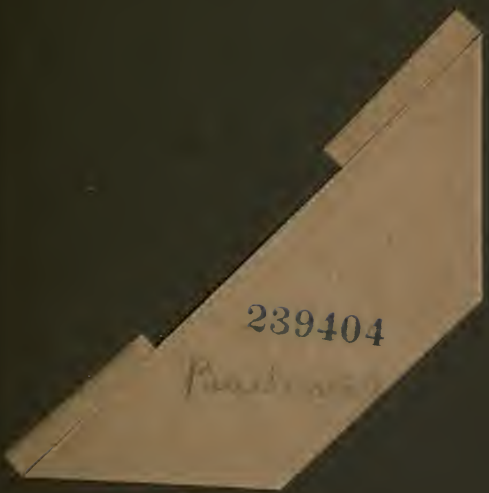
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